

AMENDMENTS TO THE DRAWINGS:

Please approve and enter the proposed amendment to the drawing Fig. 1. The proposed amendment adds reference numbers 70, 72, and 74 to Fig. 1. A replacement sheets for Fig 1 is provided herewith.

REMARKS

Claims 1, 3-12, 14, and 16-33 are currently pending. Claims 1, 12, and 21 are the pending independent claims. In the Office Action, Claims 1, 3-12, 14, and 16-33 was rejected as allegedly obvious over U.S. Patent No. 4,861,352 to Cheng et al. ("Cheng") taken in combination with a series of alleged prior art "admissions" in Applicants' specification. Claims 1, 3-12, 14, and 16-33 was also rejected as allegedly obvious over U.S. Patent No. 5,352,276 to Rentschler et al. ("Rentschler") taken in combination with the Cheng patent, and optionally, the alleged prior art "admissions." Finally, the Examiner raised objections to the drawings and alleged new matter.

Each of the foregoing rejections is respectfully traversed and favorable reconsideration is requested in view of the above amendments and following remarks.

A. The Objections to Drawing Fig. 1 and the New Matter Objection.

In the current Office Action, the Examiner has objected to, and disapproved the changes to drawing Fig. 1 previously submitted on September 20, 2007, which added reference numbers 70 and 72 to Fig. 1. In addition, the Examiner also continues to object that the September 20, 2007, amendment to the specification referring to units 70 and 72 as "treatment vessels" introduces new matter into the case.

It is worth noting that the amendments to the specification and to drawing Fig. 1 submitted on September 20, 2007, were made in response to the Examiner's comments in his February 12, 2007 Office Action that "[t]he drawings are objected to because in Figure 1, the pump and two squares above it need reference numerals." In order to address these concerns of the Examiner, Fig. 1 was amended to label the pump with reference number 74, and the "two squares" with reference numbers 70 and 72. Then, in order to introduce the new reference numbers 70 and 72, the text of the specification was amended at page 15 as follows:

The separated vapor phase stream 54 which contains most of the VOC's collected from the extract may also be treated in one or more additional treatment vessels 70, 72 to recover and / or destroy the contaminants. For instance, contaminant in the vapor phase may be recovered by absorption onto activated carbon or the

vapors may be reactively destroyed such as by combustion if the contaminant is sufficiently flammable or by means of chemical reaction using reagents and treatments known to those of ordinary skill. Of course if the contaminants levels are within permissible limits, the vapors may also be discharged directly to the atmosphere.

These changes to drawing Fig. 1 were routinely approved and entered by the Examiner in the Office Action of December 11, 2007.

It is respectfully submitted that the new matter objection to the phase "treatment vessels" is improper because the original text of the specification clearly and explicitly indicated that the separated vapor phase stream 54 could be subjected to further "treatment" in order to recover and/or destroy contaminants. Further, one of ordinary (or even rudimentary) skill in the environmental remediation arts would have clearly recognized that the two unlabeled "squares" in the Fig. 1 were vessels¹ for use in performing some form of unit operation upon the components of process stream 54, i.e., "treatment vessels." Thus, the addition of the term "treatment vessel" to the specification adds nothing new to the specification; it simply restates what was already abundantly clear from the Applicant's originally filed drawings and specification and provides a means to introduce the new reference numbers 70 and 72 which the Examiner previously insisted be added to Fig. 1.

It is further submitted that the Examiner's sudden reversal of his earlier decision to approve and enter the changes to Fig. 1 is also improper, not to mention untimely. Once again the changes to the drawing add nothing more than reference numbers which were specifically requested by the Examiner. Mere reference numbers surely do not constitute "new matter."

In view of the foregoing, it is respectfully requested that the Examiner's new matter objections to the term "treatment vessels" be withdrawn. Moreover, to the extent the Examiner's previous approval and entry of the September 20, 2007, amendments to Fig. 1 have been rescinded, it is requested that these amendments be re-approved and re-entered by the Examiner.

¹ In an engineering context, the term "vessel" itself implies nothing more than a "container." See, for instance, the *McGraw-Hill Dictionary of Scientific and Technical Terms*, 4th Edition, defining a "vessel" as a "container or structural envelope in which materials are processed, treated, or stored; for example, pressure vessels, reactor vessels, agitator vessels, and storage vessels (tanks)."

B. The Prior Art Rejections.

Once again, the Examiner has rejected the claims as allegedly obvious over the Cheng patent taken in combination with a series of alleged prior art “admissions” in Applicants’ specification. Alternatively, the Examiner also contends that the claims are obvious over the Rentschler patent taken in combination with the Cheng patent, and optionally, the alleged prior art “admissions.” As the Applicants’ have pointed out before, however, the alleged “admissions” in the specification merely describe conventional prior art groundwater remediation systems similar to those disclosed in Rentschler. Thus, there is little, if any, practical difference in the two purported obviousness combinations.

In each case, one reference (Rentschler and/or the “admissions”) discloses a conventional groundwater remediation but says nothing about use of an inline venturi stripper to treat the contaminated groundwater. The remaining reference, Cheng, discloses a venturi stripping device, but says absolutely nothing about using this venturi for groundwater remediation.

Thus, nothing in the cited prior art combinations suggests or would have led a person of ordinary skill in the art to use the venturi stripper disclosed in Cheng for groundwater remediation. Accordingly, the obviousness rejections cannot stand since:

“[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness”

See In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006) (Cited with approval in *KSR*).

In particular, nothing in the art or in the alleged “admissions” would have suggested the feasibility of liberating groundwater-bound VOC’s by inducing a two-phase flow of subterranean groundwater mixed with air/vapors to the surface and then acting upon this deliberately induced two-phase flow with a venturi-type device followed by separation into liquid and gas phases.

The Examiner’s most recent comments regarding the deliberate inducement of the two phase flow are notable and suggest that perhaps the Examiner still

misapprehends the fundamental nature of the Applicants' invention. The Applicants do indeed deliberately induce a two-phase flow (liquid and vapor) as the extract is withdrawn from the well. This is in keeping with the purpose of their invention, which again is to strip contaminants such as VOCs from contaminated groundwater – and without the use of complex and expensive stripping columns such as those disclosed in Rentschler.

Stripping is by definition a mass transfer operation in which a relatively volatile component is transferred from a liquid phase to a vapor phase. Such mass transfer can occur only at the interfacial boundary between the vapor and liquid phases. To that end the Applicants have discovered that it is advantageous to purposely induce a two-phase flow when the extract is drawn up from the ground. By inducing a two phase flow of extract, the surface area of this interfacial boundary is significantly increased, thereby promoting a more efficient stripping action. The surface area of the vapor-liquid interface, and the accompanying efficiency of the stripping action, is increased still further when the two-phase mixture is passed through the venturi stripper. Again, nothing in the cited prior art suggests purposely inducing a two-phase flow of extract for this purpose.

Accordingly, Applicants respectfully urge the Examiner to withdraw all rejections and to reconsider and allow all pending claims.

In the event this response is not timely filed, Applicants hereby petition for the appropriate extension of time and request that the fee for the extension along with any other fees which may be due with respect to this paper be charged to our Deposit Account No. 12-2355.

Respectfully submitted,

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